(12) UK Patent Application (19) GB (11) 2 377 583 (13) A

(21) Application No 0116862.4

(22) Date of Filing 10.07.2001

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(51) INT CL⁷
H04L 12/58 // G06F 17/60 , H04L 29/06

(52) UK CL (Edition V)
H4K KOD8
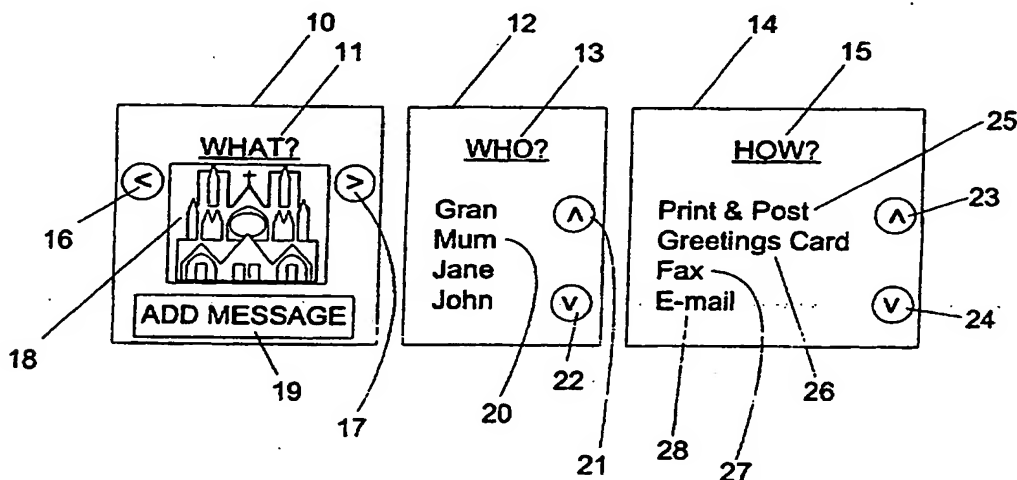
(56) Documents Cited
GB 2346504 A   US 5381527 A

(58) Field of Search
UK CL (Edition T) H4K KOD8
INT CL⁷ G06F 17/60, H04L 12/58 29/06
Other: ONLINE : WPI ; EPODOC ; PAJ

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(54) Abstract Title
Sending digital data files

(57) A method of specifying the delivery of the content of a digital data file via a digital communications network provided with delivery means, the method comprising: supplying a processor connectable to the digital communications network with the digital data file; supplying the processor with input to enable delivery coordinates for the said digital data file to be determined; supplying the processor with input specifying a delivery format in which the content of the said digital data file is to be delivered. The delivery co-ordinates are either a postal address, fax number or an electronic mail address.
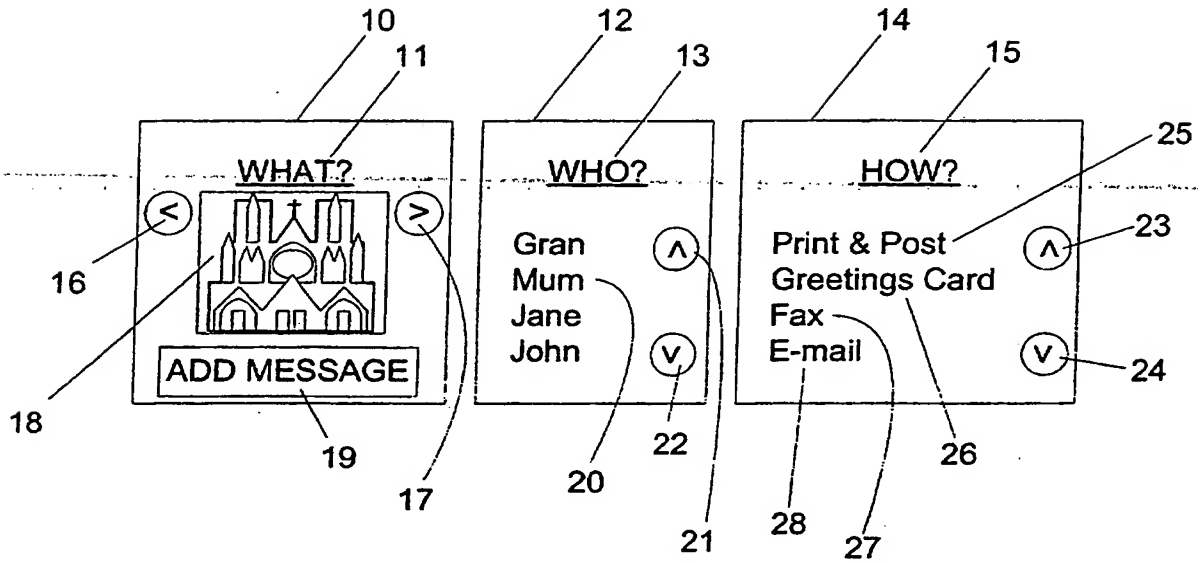
Figure 1

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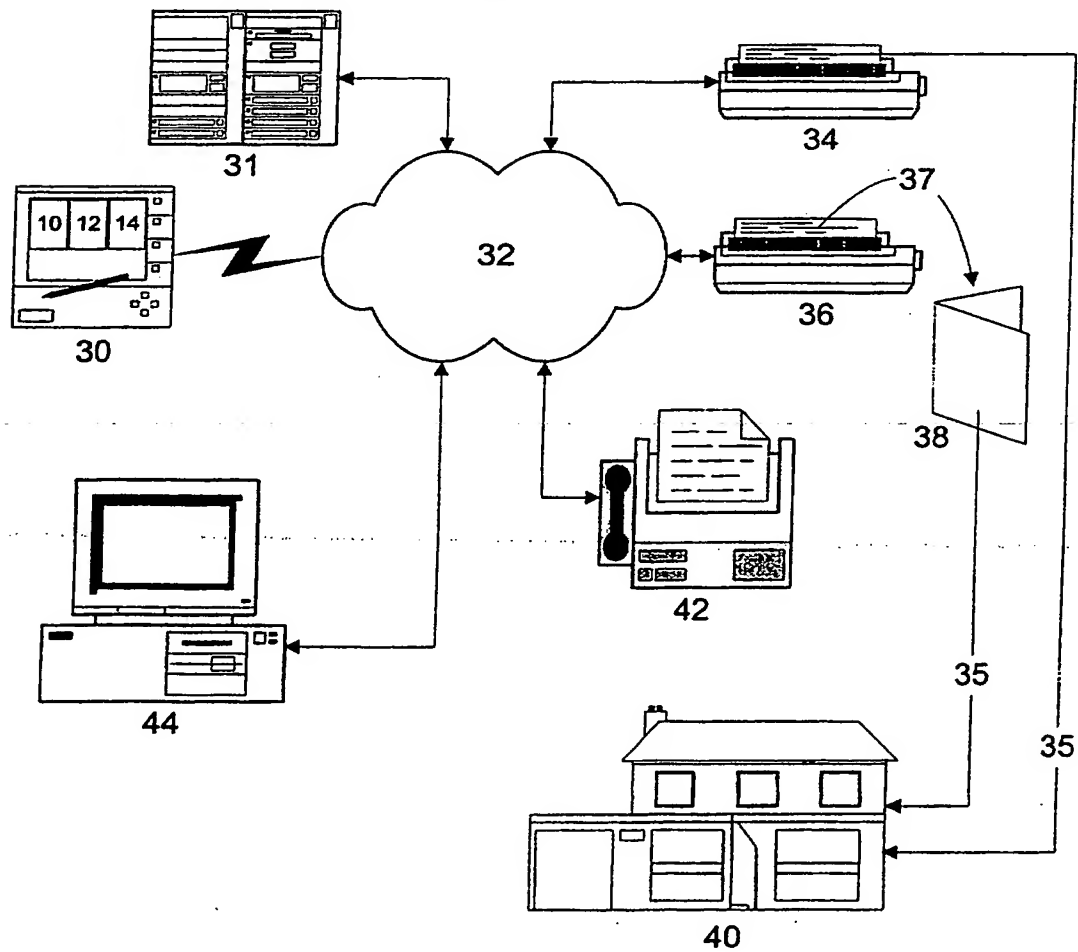
Figure 1

WHAT?	WHO?	HOW?

10 11 < > 16 17 18
ADD MESSAGE 19

Gran
Mum
Jane
John
12 13 ∧ ∨ 20 21 22

Print & Post
Greetings Card
Fax
E-mail
14 15 ∧ ∨ 23 24 25 26 27 28

Figure 2

31 30 32 34 37 36 38 35 42 44 40 35

A METHOD OF SENDING DATA

This invention relates to a method of sending the content of digital data files.

5   Digital data files are commonplace. People often create documents as digital data files using word processing software on personal computers (PCs). More recently, digital photography has increased in popularity, and accordingly many people now own digital cameras which save their photographs as digital data files.

10   Often it is necessary to send a digital data file to another person, to collaborate on a word processed document, for example, or to enable a second person to view digital photographs that have been taken. Traditionally only those fortunate enough to own or have access to a PC have been able to partake in the sending and receiving of such digital data files. A typical procedure would be for a user to create a data file (e.g. a digital photograph) and then

15   transfer it onto his computer. He would then send it (often by first attaching it to an e-mail) via a network (e.g. the Internet) to the intended recipient. Alternatively, and more awkwardly, the file could be transferred by saving it onto a portable data carrier (e.g. a floppy disk) and then passing this data carrier to the recipient. Such a process of passing a data carrier may take a long time if the two users are far apart, since postage or some other kind

20   of manual delivery service would be required.

It is clear that the above procedure has significant shortcomings in that both the sender and the recipient of the digital data file are required to own or at least have access to a PC, preferably one connected to a digital communications network such as the Internet.

25   However, PCs are not inexpensive, and at the time of writing, only about 30% of the UK

population has ready access to a PC. Furthermore, the popularity of digital photography is increasing, and since some digital cameras allow their photographs to be printed without the use of a PC, there exist users of digital cameras who create digital data files of their photographs but do not have a PC with which to send them to others.

5

Even if the creator of a digital data file has access to a suitable computer from which a file could be sent, if the recipient does not have a computer then the options for sending the file to them become very limited. The file (e.g. a document or a photograph) could be printed out and hand delivered to the recipient. However, if a longer distance is involved, then the printout would either need to be sent by post, or perhaps by fax if the intended recipient has a fax machine. (Advantageously it is possible to send a fax from a PC connected to the Internet.) However, if the intended recipient does not have access to a fax machine, then posting would be the only option, which may be particularly slow if the distance between sender and recipient is especially great (e.g. different continents).

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The advent of personal data assistants (PDAs) has gone some way in helping to bring the functionality of PCs into the hands of more people. PDAs are very useful for storing the address details of potential recipients (e.g. in a 'contacts' database) and enable data files such as word processed documents to be created. Some PDAs have integral or attachable digital cameras and thereby can be used to create digital photograph files too. However, even if a user owns a PDA, it is still awkward to send the content of a data file to a recipient, particularly one who does not own a PC, a PDA or a fax machine.

There clearly exists no straightforward means by which the content of a digital data file may be sent from the user of a digital camera, a PC or a PDA to someone who does not own one of these devices.

5   It is a general object of the present invention to overcome or at least mitigate the problems identified above.

According to a first aspect of the invention there is provided a method of specifying the delivery of the content of a digital data file via a digital communications network provided

10   with delivery means, the method comprising: supplying a processor connectable to the digital communications network with the digital data file; supplying the processor with input to enable delivery coordinates for the digital data file to be determined; supplying the processor with input specifying a delivery format in which the content of the said digital data file is to be delivered.

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This has the advantage of providing a straightforward means for sending the content of a digital data file from a first user to a second user, who may not have access to a digital camera, a PC or a PDA. The invention enables immediate functionality to be provided to the first user who requires the file content to be sent, enabling this user to take immediate action

20   such that his requirement will be satisfied. The delivery of the file content to the second user is then made via the digital communications network, with the delivery process either being initiated immediately if a suitable connection to the digital communications network exists, or being deferred until a suitable connection is made. This so-called initiation of the delivery process is the sending of the file content away from the first user, via the digital

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communications network, and through to the delivery means with which the digital communications network is provided.

Preferably the delivery means with which the digital communications network is provided are a printer and a postal service and/or facsimile transmission and/or electronic mail transmission. Having the content of the digital data file printed and posted to the second user enables him to receive the content without him being required to own or have access to a digital camera, a PC or a PDA. Using facsimile transmission provides a faster means of sending the file content than using post. Alternatively, if the second user does have access to a computer, then electronic mail transmission can be employed, with its means of execution having been simplified by this invention.

Accordingly, preferably the delivery coordinates are a postal address and/or a fax number and/or an electronic mail address, and preferably the delivery format is a postal delivery or a facsimile transmission or an electronic mail communication.

It will be appreciated that the completion of the delivery process depends on the performance of the delivery means. That is to say, delivery to the intended recipient is dependent on the postal delivery service successfully making the delivery, or on the recipient's fax machine or electronic mail facility functioning correctly, for example.

Advantageously the processor selects the appropriate delivery coordinates (e.g. the postal address or fax number) of the specified recipient according to the specified delivery format (e.g. a postal delivery or a facsimile transmission). For example, if the first user specifies

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that the file content is to be delivered in the form of a postal delivery to the second user, the processor selects the second user's postal address as the appropriate delivery destination.

Preferably the method includes providing a database holding an identity of a recipient
5   together with delivery coordinates pertaining to the said recipient, supplying the processor with the identity of the recipient and operating the processor to retrieve the delivery coordinates of the recipient from the database. This has the advantage of enabling the first user to simply supply the name (or a nickname) of the intended recipient (the second user), and the processor will then retrieve the appropriate delivery coordinates pertaining to the
10   second user, such as his postal address, fax number or e-mail address, and, as outlined above, will use the appropriate delivery destination according to the delivery format specified by the first user.

Preferably the processor forms part of a personal computer, a personal data assistant, a
15   mobile station or a digital camera. The invention is also intended to apply to possible combinations of these (and similar) devices, such as a PDA or a mobile phone having a built-in digital camera.

Preferably the method further comprises supplying the processor with text for delivery
20   together with the content of the said digital data file. This text could advantageously be a greeting, a reminder of the reason why the data file was created, explanatory notes, or any other alphanumeric string the user wishes to be sent to the specified recipient along with the content of the digital data file.

According to a second aspect of the invention there is provided a computer program to enable the sending of the content of a digital data file, the program being arranged during execution to enable a processor connectable to a digital communications network to receive a digital data file, to receive input to enable the processor to determine delivery coordinates, to receive input specifying the delivery format in which the content of the digital data file is to be delivered, and to cause the delivery of the content of the digital data file to delivery means via the digital communications network.

Preferably the delivery format specified is postal delivery or facsimile transmission or electronic mail communication, and preferably the delivery coordinates determined are a postal address or a fax number or an electronic mail address.

Preferably the computer program provides the processor with access to a database in which is stored an identity of a recipient together with delivery coordinates pertaining to the recipient, the program thereby enabling the processor to retrieve, from the database, the delivery coordinates pertaining to the recipient on receiving input comprising the said identity of the recipient.

According to a third aspect of the invention there is provided a computer program stored on a data carrier to enable the sending of the content of a digital data file, the program being arranged during execution to enable a processor connectable to a digital communications network to receive a digital data file, to receive input to enable the processor to determine delivery coordinates, to receive input specifying the delivery format in which the content of the digital data file is to be delivered, and to cause the delivery of the content of the digital data file to delivery means via the digital communications network.

According to a fourth aspect of the invention there is provided a computer program executing on a processor connectable to a digital communications network to enable the sending of the content of a digital data file, the program being arranged to enable the processor to receive a

5   digital data file, to receive input to enable the processor to determine delivery coordinates, to receive input specifying the delivery format in which the content of the digital data file is to be delivered, and to cause the delivery of the content of the digital data file to delivery means via the digital communications network.

10   According to a fifth aspect of the invention there is provided a computer program executing on a processor on a server connected to a digital communications network to enable the sending of the content of a digital data file, the program being arranged to enable a processor connectable to a digital communications network to receive a digital data file, to receive input to enable the processor to determine delivery coordinates, to receive input

15   specifying the delivery format in which the content of the digital data file is to be delivered, and to cause the delivery of the content of the digital data file to delivery means via the digital communications network. Running the program on a server connected to a digital communications network (e.g. on a webserver on the Internet) provides the advantage that the method of the present invention may be run by a third party remote from the first and

20   second users.

Embodiments of the invention will now be described, by way of example, and with reference to the drawings in which:

Figure 1 is an illustrative screenshot generated by a processor operating the method of the

25   invention; and

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Figure 2 is a schematic diagram of a network to which are connected means for sending file content to a selected recipient.

The method of the present invention may be executed by a user taking action using the processor of a personal computer (PC), a personal data assistant (PDA), a digital camera or a mobile station such as a mobile telephone. In each case the user interacts with processor by supplying instructions to the processor via the device's user interface, and by viewing the device's display output (e.g. the monitor of a PC).

A first user is enabled to send the content of a digital data file to a second user. As illustrated in Figure 1, this is achieved by supplying three pieces of information to the processor of the PC, PDA, or whatever digital device is being employed. This information, which may be supplied in any order, is illustrated graphically on the display of the device as three menus 10,12,14 which correspond respectively to:

- what data file content is to be sent (i.e. "What (11) is to be sent?");
- to whom the content of the selected digital data file is to be sent (i.e. "Who (13) is to be the recipient?"); and
- the format in which the content of the selected digital data file is to be sent to the intended recipient (i.e. "How (15) to send it?").

These three menus may appear as boxes (as shown in Figure 1), or in a pull-down menu format, or in an alternative menu format as are known to those skilled in the art.

The first menu 10 displays the content of a data file, in this case, a digital photograph 18, and selection means are provided to enable the user to select, from a predetermined

directory, the data file whose contents are to be sent to the second user. The content of the selected file appears before the user. As shown in the Figure, the selection means may comprise two icons 16,17 which can be activated by clicking using a mouse on a PC, or by touching with a stylus on a touch-sensitive PDA screen. By selecting the 'next' icon 17 the

5   selection advances to the next file in the directory, whilst by selecting the 'previous' icon 16 the selection goes back to the previous file in the directory. Methods of using icons to enable files to be selected are well known in the fields of computing and user interface engineering.

10   In the preferred embodiment of Figure 1, the user is also provided with an option 19 to add a message to accompany the file content (e.g. photograph) to be sent. This message may be explanatory text (e.g. details of the photograph) or may be a greeting. In the latter case this enables the provision of a straightforward way to compose and send greetings cards. The provision of this 'Add Message' option 19 contributes valuable functionality, particularly if the

15   user is using a digital camera. Many digital camera users have a reason for taking a particular photograph, and may have an accompanying message or phrase and an intended recipient (and quite possibly a delivery format) in mind at the time of taking the picture. By using the present invention immediately after taking the photograph, the user can ensure that he does not forget to whom the picture should be sent, and by utilising the 'Add

20   Message' feature 19 he is able to add his accompanying text straight away, before he could have a chance to forget.

The user is required to select the identity of the person to whom it is wished that the file content is to be sent. Accordingly the second menu 12 provides a list 20 of the names of

25   possible recipients from which the user can make a selection. The user can select the

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desired recipient by clicking on the appropriate name. Icons 21,22 are provided to enable the user to scroll through names if there are more names in the list than can be displayed at any one time.

5   The user is also required to select the format in which the file content is to be sent to the chosen recipient. A series of options 25-28 are displayed in the third menu 14, from which the user can make a choice. Common options are:

- to print out the file content and to send it to the intended recipient by post (25);

- to print the chosen file content (provided it is an image) on the cover of a greetings card
10   and to print a message (as supplied using the 'Add Message' facility 19 described above) inside the card (26);

- to send the chosen file content by fax (27); and

- to send the chosen file content by e-mail (28).

15   Again, icons 23,24 are provided to enable the user to scroll through the delivery options if there are more options in the list than can be displayed at any one time.

Upon selecting the delivery format 25-28 the file content can then be sent, although, prior to dispatch, the user may be shown a dialogue box inviting him to confirm the file content to be
20   sent, the intended recipient and the delivery format. The delivery of the file content to the second user is then made via a digital communications network such as the Internet, with the delivery either being initiated immediately if a suitable connection to the digital communications network exists, or being deferred until a suitable connection is made.

It will be appreciated that file transfer between digital cameras and devices such as PCs and PDAs is readily possible, using manual means (e.g. physically transporting a data carrier such as a solid state memory module from one device to another), via an electrical connection (e.g. a USB or a serial cable), or using wireless means such as Bluetooth (RTM)

5   or infra-red transmission. Because of its fast data transfer rate, Bluetooth (RTM) transmission is particularly suited to image file transfer.

Accordingly, file content created on a digital camera may be dispatched from a PC or a PDA, via the Internet or another network, in accordance with the present invention. Alternatively

10   the file content may be sent directly from the digital camera if the camera is equipped with suitable connectivity features (e.g. a network interface or modem) and is connected to the appropriate network. This connection could be made by cable or via a Bluetooth (RTM) link, either of which could potentially be made via a mobile phone equipped with a Bluetooth (RTM) transceiver. Mobile phones with built-in digital cameras are also envisaged, and in

15   such a case the photograph would be sent directly from the phone to the Internet.

Enabling the method of the present invention to be used with a digital camera provides for an elegant service in which a user takes a digital photograph, adds accompanying text as desired, identifies a recipient, and informs the processor of the format in which the

20   photograph (and accompanying text) is to be sent to the recipient. The photograph is then dispatched accordingly.

The three menus 10,12,14 will now be explained in more detail:

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File selection menu 10

It is envisaged that the files presented to the user would predominantly be image files, in particular, digital photographs taken using the user's own digital camera. The photographs (or other files) from which the user can make his selection are stored in a database or

5   another file store of some kind. Since the method of the present invention may be operated on various electronic devices, the location of the database is likely to be influenced by the electronic device used. For example, if the method is operated on a PC the database may be on one of the PC's local file storage media (e.g. the hard disk), or alternatively may be on a remote file store such as a network server or a webserver. If the method is operated on a

10   PDA the photographs or other files may be held locally (e.g. on a solid state memory module inserted in the PDA) or on a device connected to the PDA such as a digital camera, or alternatively may be on a remote file store such as a webserver. If the method is operated on a digital camera, then the files will probably be digital photographs held in the camera's memory, whereas if the device being used is a mobile telephone the files are more likely to

15   be held remotely from the phone, e.g. on a webserver accessible from the phone via the Internet. However, if the device is a mobile phone with a built-in camera then the photographs would be likely to be stored locally in the device's memory.

Recipient selection menu 12

20   The list of recipients 20 is preferably drawn from a 'contacts' database local to the electronic device being used, or alternatively on a remote database such as a webserver. It is envisaged that a common way by which a user would use the method of the present invention, e.g. using a PDA, would be for him to select a digital photograph from a web-based database and then to choose a recipient from his local contacts database. However,

25   it will be appreciated that the contacts database may be also be on remote server.

As illustrated in Figure 1, preferably only a list of names 20 are displayed in the menu 12. The database of names is pre-prepared with the postal address and/or fax number and/or e-mail address associated with each name in the list. This thereby provides a straightforward

5   facility for the user to use: The user only needs inform the processor of the name of the intended recipient, and the software draws upon the database to avail itself of the associated postal address and/or fax number and/or e-mail address.

If the user's contacts database is held on a remote webserver it is envisaged that the

10   provider of the webserver will arrange for the contacts details to periodically updated from the user. Alternatively the content of such a database could be verified with reference to other (third party) databases such as those containing telephone directory information or the electoral register.

15   _Delivery format selection menu 14_

This menu is intended to be contextual, such that it only presents options if the relevant delivery coordinates (e.g. the intended recipient's postal address, fax number or e-mail address) are known to the database being used.

20   As shown in Figure 2, the method causes delivery means to be employed that are appropriate to the delivery format 25-28 selected by the user. In the example shown in the Figure, the user is using a PDA 30 connected to the Internet 32. The user has used menus 10 and 12 to instruct the processor of the PDA 30 as to the file content he wishes to send, and the identity of the desired recipient. If, in menu 14, the user now selects 'Print & Post'

25   25 the processor causes the content of the selected file to be sent, via the Internet 32, to a

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printer 34. Since a delivery format has been selected which requires knowledge of the recipient's postal address, this address is extracted from the contacts database of the PDA 30 (or alternatively from a web-based database held on a webserver 31) and is also sent to the printer 34. The file content and an address label are printed by the printer 34 and are

5   then dispatched, by the local postal delivery service 35, to the residence 40 of the intended recipient.

If the user selects 'Greetings Card' 26 then the processor causes the file content to be printed 37 by a printer 36 configured to print the appropriate image and message onto a
10   greetings card 38. An address label is printed using the recipient's address taken from the contacts database. The greetings card 38 is then delivered by the local postal delivery service 35 to the recipient's residence 40. Other specialised print options which could be supported by this invention could include the printing of T-shirts, jigsaw puzzles, coasters and calendars, for example. These options would be presented in menu 14, and a suitable
15   printer would be used instead of the greetings card printer 36.

Alternatively, if 'Fax' 27 is selected, the processor causes the file content to be sent to the recipient's fax machine 42. Because 'Fax' 27 has been selected, the processor extracts the appropriate fax number from the contacts database, thereby enabling the file content to be
20   delivered to the recipient by facsimile transmission. If the file content to be sent by fax is an image (for example, a photograph) then, if necessary, it is first digitally re-rendered by image processing software such that it is sent to the recipient's fax machine 42 in dithered rendering, thereby improving the clarity of the image printed by the fax machine 42.

If the user selects 'E-mail' 28 then the processor retrieves the recipient's e-mail address from the contacts database and sends the digital file (typically in its original format) via the Internet 32 to the recipient's e-mail address. The recipient may then view this file using his PC 44.

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Web-based service

The processor on which the user takes action must be connected to a digital communications network in order to send the file content to the required destination. Accordingly, the network must also be connected to the printing and dispatch means discussed above. The method of the invention is consequently especially well suited to being run by a third party via the Internet, who would make a charge to the user in return for providing the chosen dispatch service. Such a third party can run a plurality of printers in different locations around the world (e.g. one per country), thereby enabling the swift printing and postal delivery of file content to the intended recipient. The routing software run by the webserver would send the file content to the appropriate printer according to the postal address of the intended recipient.

CLAIMS

1. A method of specifying the delivery of the content of a digital data file via a digital communications network provided with delivery means, the method comprising: supplying a processor connectable to the digital communications network with the digital data file; supplying the processor with input to enable delivery coordinates for the said digital data file to be determined; supplying the processor with input specifying a delivery format in which the content of the said digital data file is to be delivered.

2. A method as claimed in Claim 1 wherein the delivery means with which the digital communications network is provided are a printer and a postal service and/or facsimile transmission and/or electronic mail transmission.

3. A method as claimed in Claim 1 wherein the delivery coordinates are a postal address and/or a fax number and/or an electronic mail address.

4. A method as claimed in Claim 1 wherein the delivery format is a postal delivery or a facsimile transmission or an electronic mail communication.

5. A method as claimed in any preceding Claim including providing a database holding an identity of a recipient together with delivery coordinates pertaining to the said recipient, supplying the processor with the identity of the recipient and operating the processor to retrieve the delivery coordinates of the recipient from the database.

6. A method as claimed in any preceding Claim wherein the processor forms part of a personal computer, a personal data assistant, a mobile station or a digital camera.

7. A method as claimed in any preceding Claim further comprising supplying the processor with text for delivery together with the content of the said digital data file.

8. A computer program to enable the sending of the content of a digital data file, the program being arranged during execution to enable a processor connectable to a

digital communications network to receive a digital data file, to receive input to enable the processor to determine delivery coordinates, to receive input specifying the delivery format in which the content of the digital data file is to be delivered, and to cause the delivery of the content of the digital data file to delivery means via the said

5   digital communications network.

9.   A computer program as claimed in Claim 8 wherein the delivery format specified is postal delivery or facsimile transmission or electronic mail communication.

10.   A computer program as claimed in Claim 8 wherein the delivery coordinates determined are a postal address or a fax number or an electronic mail address.

10   11.   A computer program as claimed in any of Claims 8 to 10 which provides the processor with access to a database in which is stored an identity of a recipient together with delivery coordinates pertaining to the recipient, the program thereby enabling the processor to retrieve, from the database, the delivery coordinates pertaining to the recipient on receiving input comprising the said identity of the

15   recipient.

12.   A computer program stored on a data carrier to enable the sending of the content of a digital data file, the program being arranged during execution to enable a processor connectable to a digital communications network to receive a digital data file, to receive input to enable the processor to determine delivery coordinates, to receive

20   input specifying the delivery format in which the content of the digital data file is to be delivered, and to cause the delivery of the content of the digital data file to delivery means via the digital communications network.

13.   A computer program executing on a processor connectable to a digital communications network to enable the sending of the content of a digital data file, the

25   program being arranged to enable the processor to receive a digital data file, to

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receive input to enable the processor to determine delivery coordinates, to receive input specifying the delivery format in which the content of the digital data file is to be delivered, and to cause the delivery of the content of the digital data file to delivery means via the digital communications network.

5   14.   A computer program executing on a processor on a server connected to a digital communications network to enable the sending of the content of a digital data file, the program being arranged to enable a processor connectable to a digital communications network to receive a digital data file, to receive input to enable the processor to determine delivery coordinates, to receive input specifying the delivery

10   format in which the content of the digital data file is to be delivered, and to cause the delivery of the content of the digital data file to delivery means via the digital communications network.

15.   A method of delivering a document comprising:

        receiving the document as a digital data file from a user, and further receiving

15   delivery co-ordinates of a type included within a set of predetermined types;

        providing the document in a format appropriate for delivery to delivery co-ordinates of that type; and

        sending the document provided to the delivery co-ordinates.

16.   A method as claimed in any of Claims 1 to 7, wherein the delivery co-ordinates are of

20   a type included within a set of predetermined types

17.   A method of sending the content of a digital data file substantially as hereinbefore described with reference to the accompanying drawings.

18.   A computer program to enable the sending of the content of a digital data file substantially as hereinbefore described with reference to the accompanying

25   drawings.

Application No: GB 0116862.4
Claims searched: 1-18

Examiner: Richard Howe
Date of search: 13 February 2002

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): H4K (KOD8)

Int Cl (Ed.7): H04L (12/58 , 29/06) ; G06F (17/60)

Other: Online : wpi ; epodoc ; paj

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	GB 2 346 504 A	(E-Stamp Corporation) - see whole document	1-16
A	US 5 381 527	(International Business Machines) - see whole document	

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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